

ABSTRACT OF THE DISCLOSURE

A fuel cell system for powering a work load includes a fuel cell stack and a shunt regulator having a threshold detection; transistorized power switching element, and a dump load. The threshold detection element identifies when an abnormally high voltage rises. The power switching element routes power from the high voltage buss to the dump load. The dump load acts as an electrical energy sink, and may provide dissipated energy to the fuel cell stack in the form of heat. The switching element can also shunt power to the dump load when a digital control signal is set, for example at startup or during cold start conditions.

130109.431/239265_1 DOC